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EXAMINER

BAYARD, DJENANE M

ART UNIT

PAPER NUMBER

2141

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/714,406

Applicant(s)

BAHL ET AL.

Examiner

Djenane M Bayard

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3. 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 1, the phrase "it" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,671,259 to He et al.

a. As per claim 1, He et al teaches a system for performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the system comprising: a first domain name server deployed on an Internet backbone (DNS-B) (See col. 5, lines 52-54); and a plurality of load balancing domain name servers (DNS-LBs) deployed in close physical proximity to the clients (See col. 5, lines 59-61 and col. 4, lines 66-67), the DNS-LBs having stored therein IP address information of the multiple globally-dispersed servers to be load balanced (See col. 10, lines 15-32), the (DNS-LBs) each sending mapping information to the DNS-B relating the DNS-LB's IP address to an IP address of the DNS-ISP to which it is in close physical proximity (See col. 7, lines 29-34), the DNS-LBs determining performance characteristics of each of the multiple globally-dispersed servers (See col. 9, lines 66-67 and col. 10, lines 1). (Remarks: The LB server and the LBS selector perform the function of domain name server since they translate domain names into Internet Protocol (IP) address or numbers).

b. As per claim 2, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines

29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address to the DNS-ISP of the server having the best performance characteristics (See col. 4, lines 5-15).

c. As per claim 3, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines 29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address of the DNS-LB to the DNS-ISP (See col. 4, lines 1-4).

d. As per claim 4, He et al teaches wherein the DNS-B provides its IP address information to the DNS-A to enable the DNS-A to forward IP address queries to the DNS-B (See col. 5, lines 50-52).

e. As per claim 5, He et al teaches wherein the DNS-B receives IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-7).

f. As per claim 6, He et al teaches wherein the DNS-LB is a client of the DNS-ISP (See col. 5, lines 29-39).

g. As per claim 7, He et al teaches wherein a DNS-B deployed on each Internet backbone, and wherein each DNS-B contains the mapping information for all of the DNS-LBs stored therein (See col. 10, lines 15-32).

h. As per claim 8, He et al teaches wherein the DNS-LB transmits updated mapping information upon a change of an IP address of the DNS-ISP (See col. 6, lines 14-27).

i. As per claim 9, He et al teaches wherein each of the DNS-LBs transmit performance information of the servers to the DNS-B, and wherein the DNS-B utilizes the mapping information to determine the proper DNS-LB (See col. 10, lines 15-32) performance information to utilize to select the IP address of the server having the best performance characteristics to return to the DNS-ISP from which an IP address query originated (See col. 11, lines 60-67).

g. As per claim 10, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the method comprising the steps of receiving IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-13); providing the IP address information to a plurality of load balancing domain name servers (DNS-LB) (See col. 11, lines 20-22); receiving mapping information associating DNS-ISP IP address information to IP address information of a proximately located DNS-LB capable of determining server performance from a location physically proximate to the ISP's point of presence and referring address inquiries from a DNS-ISP to a physically proximate DNS-LB in accordance with the mapping information (See col. 9, lines 27-67).

k. As per claim 11, He et al teaches a computer-readable medium having computer executable-instructions (See col. 10, lines 44-55).

l. As per claim 12, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the method comprising the steps of obtains, by a load balancing domain name server (DNS-LB), IP address information for a DNS-ISP located in close physical proximity to the DNS-LB; providing a mapping of an IP address of the DNS-LB to the IP address information of the DNS-ISP to an external domain name server (See col. 9, lines 31-35); receiving IP address information for the servers (See col. 10, lines 23-25); monitoring performance of the servers at the received IP addresses (See col. 7, lines 55-60); and providing at least one IP address for a server in response to a name query selected based on the monitoring step (See col. 5, line 66-67 and col. 6, lines 1).

m. As per claim 13, He et al teaches a method further comprising the steps of detecting a change in the DNS-ISP IP address; and updating the mapping of the IP address of the DNS-LB to the IP address information of the DNS-ISP to the external domain name server (See col. 9, lines 13-67).

n. As per claim 14, He et al teaches wherein comprising the steps of receiving selection criteria for the selection of an IP address; receiving a name query from the DNS-ISP (See col. 5, lines 47-49); and wherein the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step further comprises the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step and on the selection criteria (See col. 5, line 66-67 and col. 6, lines 1).

o. As per claim 15, He et al teaches a computer-readable medium having computer-executable instructions (See col. 10, lines 44-55).

p. As per claim 16, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the method comprising the steps of receiving an IP address of a domain name server to which name queries are to be forwarded for load balancing (See col. 5, lines 59-63); providing IP address information for the servers to the domain name server and forwarding name queries from the DNS-ISP to the IP address of the domain name server (See col. 11, lines 60-63). (Remarks: The LB server and the LBS selector perform the function of domain name server since they translate domain names into Internet Protocol (IP) address or numbers).

- q. As per claim 17, He et al teaches computer-readable medium having computer-executable instructions (See col. 10, lines 44-55).
- r. As per claim 18, He et al teaches a computer-readable medium having stored thereon a data structure comprising: a first data field containing IP address information for an Internet service provider's domain name server (DNS-ISP); a second data field containing IP address information for a load balancing domain name server (DNS-LB) (See col. 11, lines 13-15 and table 1); and wherein the first data field and the second data field are associated to one another so as to provide a mapping from the IP address of the DNS-ISP to the IP address of the DNS-LB (See col. 11, lines 26-67).
- s. As per claim 19, He et al teaches a computer-readable medium wherein the first data field comprises a first column of data fields containing a plurality of IP address entries for a plurality of DNS-ISPs, wherein the second data field comprises a second column of data fields containing a plurality of IP address entries for a plurality of DNS-LBs, and wherein an association between each entry in the first column and each entry in the second column forms mapping rows from each DNS-ISP IP address to a DNS-LB IP address (See col. 9, lines 13-67 and Table 1).
- t. A method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through Internet service providers (ISPs) at a point of presence (POP), (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information

regarding the IP addresses of the servers (See col. 5, lines 45-49), the method comprising the steps of: deploying a first plurality of load balancing domain name servers (DNS-LBs) in close physical proximity to the ISP POPS (See col. 5, lines 59-61 and col. 4, lines 66-67); deploying a second plurality of second level domain name servers (DNS-Bs) on the Internet backbones and regional provides (See col. 5, lines 52-54); communicating IP address information for the DNS-Bs to the DNS-As to enable the DNS-As to refer name queries to the DNS-Bs; providing, by the DNS-LBs to the DNS-B, mapping information associating an IP address of the DNS-LB to an IP address of the physically proximate DNS-ISP to enable the DNS-B to refer name queries from a DNS-ISP to the physically proximate DNS-LB and communicating IP address information of the servers to the DNS-LBs (See col. 10, lines 15-32); monitoring, by the DNS-LBs at a location physically proximate to the ISP POP, performance of the servers (See col. 7, lines 55-60); and providing, by the DNS-LB in response to a query from the DNS-ISP, the IP address of a server based on the step of monitoring (See col. 9, lines 66-67 and col. 10, lines 1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,671,259 to He et al in view of U.S. Patent No. 6,11,745 to Berstis et al.

a. As per claim 21, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through Internet service providers (ISPs) at a point of presence (POP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49), the method comprising the steps of deploying a first plurality of measurement service agents (MServices) in close physical proximity to the ISP POPs (See col. 5, lines 52-54); monitoring, by the MServices at a location physically proximate to the ISP POP, performance of the servers (See col. 7, lines 55-60); and providing, by the DNS-ISP-LB in response to a query from the client, the IP address of a server based on the step of monitoring (See col. 9, lines 66-67 and col. 10, lines 1). However, He et al fails to teach wherein each ISP having a domain name server (DNS-ISP).

Berstis et al teaches scheduling of distributed agents in a dialup network. Furthermore, Berstis et al teaches wherein each ISP having a domain name server (DNS-ISP) (See col. 1, lines 66-67).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein each ISP having a domain name server (DNS-ISP) as taught by Berstis et al in the claimed invention of He et al in order to involve having the ISP setting the individual schedules for all the clients in a deterministic way (See col. 2, lines 1-3).

b. As per claim 22, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through Internet service providers (ISPs) at a point of presence (POP) (See col. 5, lines 45-49), each ISP having a load balancing domain name server (DNS-ISP-LB), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49), the method comprising the steps of: deploying a first plurality of measurement service agents (MServices) in close physical proximity to the ISP POPS (See col. 5, lines 52-54); monitoring, by the MServices at a location physically proximate to the ISP POP, performance of the servers; and providing, by the DNS-ISP-LB in response to a query from the client, an IP address of the Mservice (See col. 4, lines 1-4).). However, He et al fails to teach wherein each ISP having a domain name server (DNS-ISP).

Berstis et al teaches scheduling of distributed agents in a dialup network. Furthermore, Berstis et al teaches wherein each ISP having a domain name server (DNS-ISP) (See col. 1, lines 66-67).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein each ISP having a domain name server (DNS-ISP) as taught by Berstis et al in the claimed invention of He et al in order to involve having the ISP setting the individual schedules for all the clients in a deterministic way (See col. 2, lines 1-3).


Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djenane M Bayard whose telephone number is (703) 305-6606. The examiner can normally be reached on 7:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (703) 305-4003. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Djenane Bayard


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER